

REMARKS

Status of the Claims

Claims 1 and 5-37 are pending. Claims 5 and 22 are amended. Support for these amendments may be found throughout the application as originally filed.¹ No new matter is added.

Withdrawn Rejections

Applicants greatly appreciate the Examiner's withdrawal of the enablement and anticipation rejections over claim 5.

Rejections Under 35 U.S.C. § 112, Written description

Claims 5, 22, and 37 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement.

Claims 5 and 22 have been amended to recite "obtained," and claim 22 is amended to recite "SEQ ID NO: 5." To the extent the rejection applies to the amended claims, Applicants provide the following comments.

The claims are directed to proteins obtained by specific methods. There is no dispute that the specification describes these methods. Indeed, the specification teaches, and the USPTO acknowledges, *inter alia*, that the Examples involve obtaining OK1 proteins from six different plant species.² Accordingly, one of skill in the art would conclude that Applicants were in possession of the claimed methods and thus the proteins obtained from these methods.

The claimed proteins comprise the phosphohistidine domain of SEQ ID NO: 5. The specification demonstrates that OK1 proteins from various plant species, such as rice, *Arabidopsis*, and millet comprise this phosphohistidine domain.³ The specification teaches that the histidines, in the phosphohistidine domain of OK1 proteins, participate in the phosphorylation reaction.⁴ The specification also discloses that OK1 proteins occur as an autophosphorylated intermediate in the reaction catalyzed.⁵ Taken together, the phosphohistidine domain of OK1 proteins participates in the phosphorylation reaction catalyzed by these proteins, and that the phosphate groups are bound

¹ See, e.g., Specification, page 27, lines 7-14.

² See Office Action, page 8.

³ See SEQ ID NO: 2 (amino acids 754-765); SEQ ID NO: 4 (amino acids 771-782), SEQ ID NO: 5 (phosphohistidine domain), and SEQ ID NO: 22 (amino acids 488-499); see also Specification, page 44, lines 14-15.

⁴ See, e.g., Specification, Example 7 (pages 81-83), and in particular, page 83, lines 4-8.

⁵ *Id.* at page 19, lines 1-8; Example 7; Figures 2 and 5.

to a histidine leading to a phosphorylated OK1 protein, occurring as an intermediate in the phosphorylation of glucans. As such, one of skill in the art would understand that the phosphohistidine domain is necessary for activity of an OK1 protein. Accordingly, the specification describes a structure/function relationship and thus adequately describes the full scope of the claimed proteins.

In view of the foregoing, Applicants respectfully request withdrawal of this rejection.

Rejections Under 35 U.S.C. § 102(e)

Claims 22 and 37 stand rejected under 35 U.S.C. §102(e), as allegedly being anticipated by US 20060123505 (“Kikuchi”).

Claim 22 is amended to recite that the OK1 protein comprises SEQ ID NO: 5. Claim 37 depends from claim 22. Kikuchi does not teach or suggest SEQ ID NO: 5. Indeed, the USPTO withdrew the anticipation rejection over claim 5, which was amended to recite SEQ ID NO: 5. Accordingly, this rejection is moot.

As a final matter, the USPTO requests clarification as to whether SEQ ID NO: 4 is an OK1 protein and comprises SEQ ID NO: 5. As discussed above, SEQ ID NO: 4 as an OK1 protein. Moreover, amino acids 771-782 of SEQ ID NO: 4 are the same amino acids as set forth in SEQ ID NO: 5. Accordingly, SEQ ID NO: 4 is an OK1 protein and comprises SEQ ID NO: 5.

CONCLUSION

In view of the above remarks, early notification of a favorable consideration is respectfully requested. An indication of allowance of all claims is respectfully requested.

If the Examiner has any questions relating to this response, or the application in general, he is respectfully requested to contact the undersigned so that prosecution of this application may be expedited.

Respectfully submitted,

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